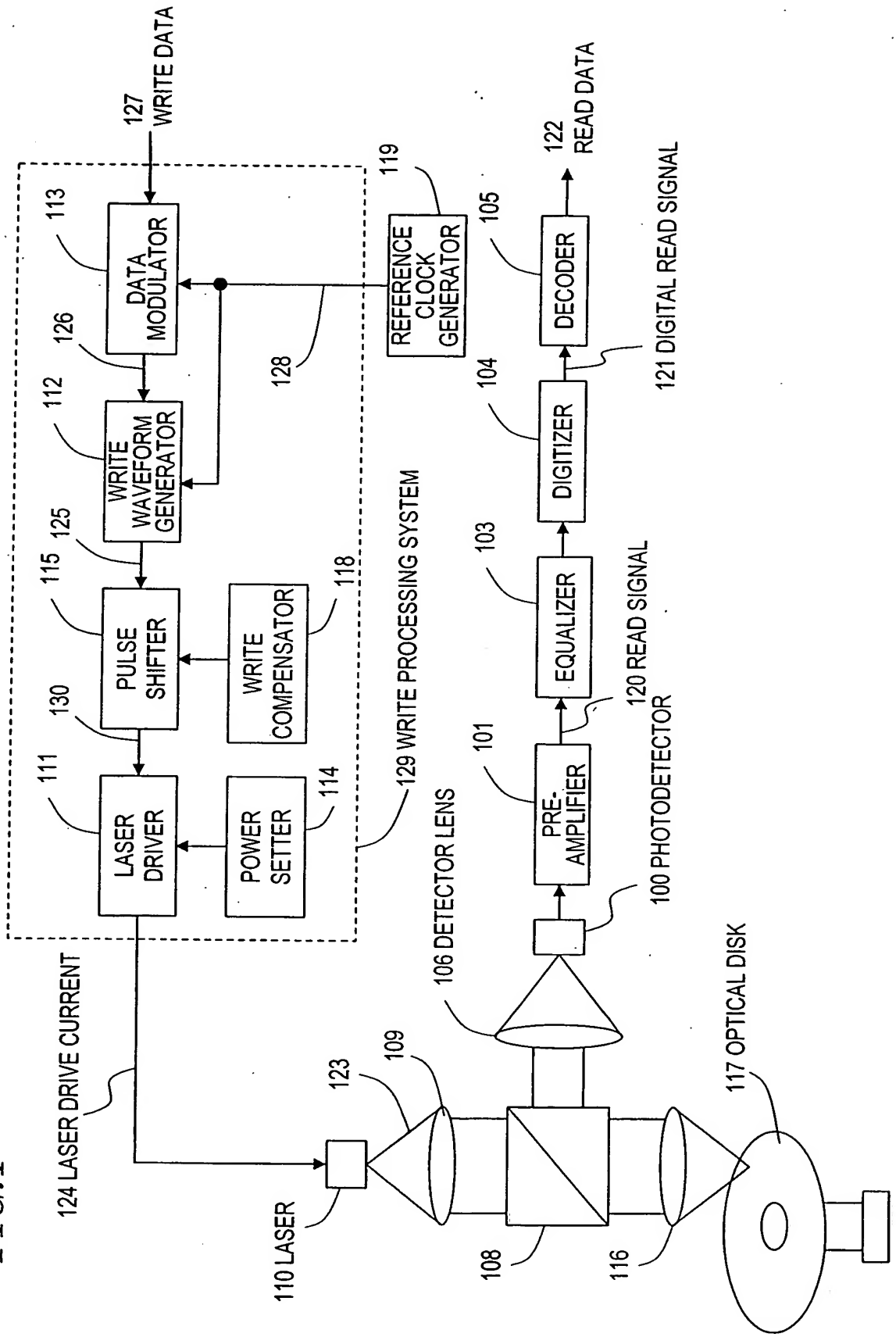

127 WRITE DATA
DATA MODULATOR
113
126
WRITE WAVEFORM GENERATOR
112
125
PULSE SHIFTER
115
WRITE COMPENSATOR
118
130
LASER DRIVER
111
POWER SETTER
114
129 WRITE PROCESSING SYSTEM
119
REFERENCE CLOCK GENERATOR
128
105
DECODER
122 READ DATA
104
DIGITIZER
121 DIGITAL READ SIGNAL
103
EQUALIZER
120 READ SIGNAL
101
PRE-AMPLIFIER
100 PHOTODETECTOR
106 DETECTOR LENS
124 LASER DRIVE CURRENT
123
109
110 LASER
108
116
117 OPTICAL DISK

FIG. 1

FIG.2

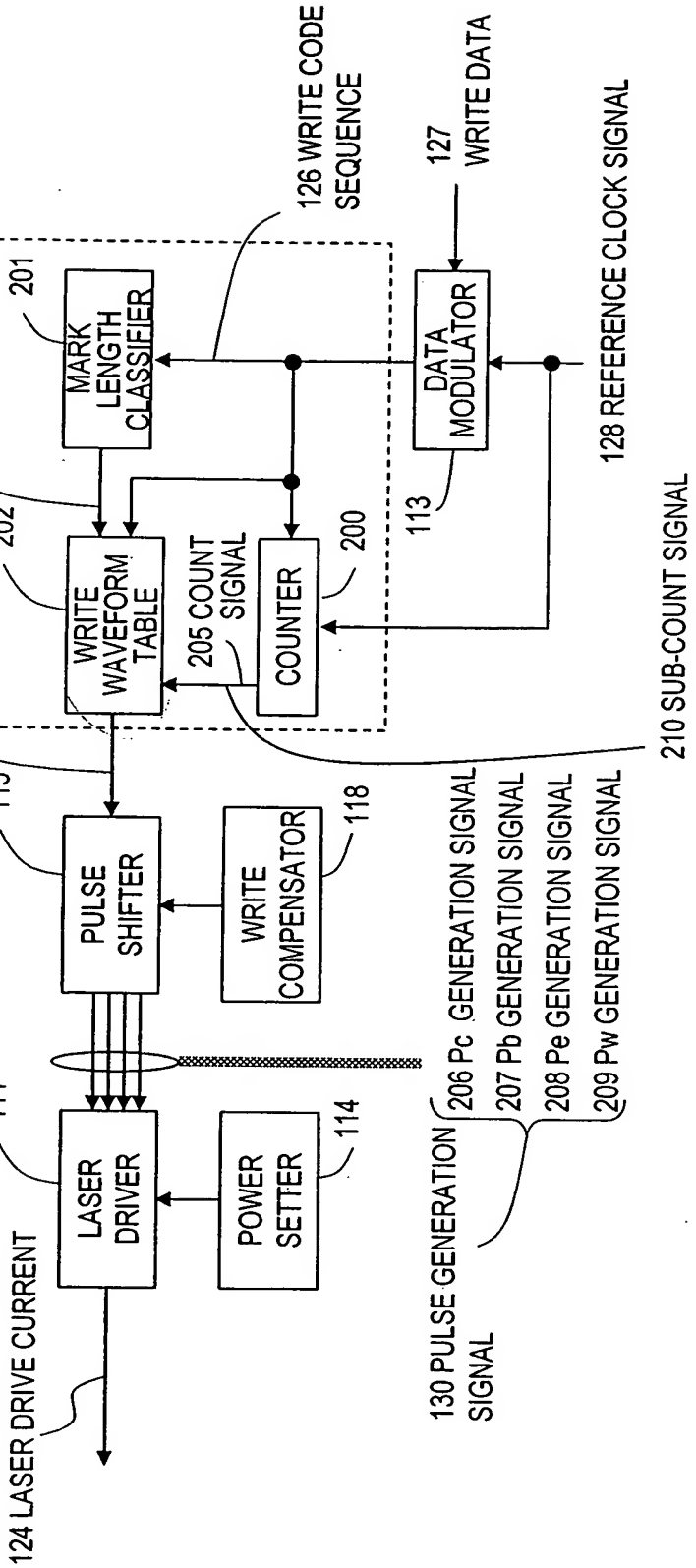

204 MARK LENGTH CLASSIFICATION SIGNAL
126 WRITE CODE SEQUENCE
127 WRITE DATA
128 REFERENCE CLOCK SIGNAL
201
MARK LENGTH CLASSIFIER
DATA MODULATOR
202
WRITE WAVEFORM TABLE
205 COUNT SIGNAL
COUNTER
200
113
125
210 SUB-COUNT SIGNAL
115
PULSE SHIFTER
WRITE COMPENSATOR
118
111
LASER DRIVER
POWER SETTER
114
124 LASER DRIVE CURRENT
130 PULSE GENERATION SIGNAL
206 Pc GENERATION SIGNAL
207 Pb GENERATION SIGNAL
208 Pe GENERATION SIGNAL
209 Pw GENERATION SIGNAL

*FIG.3*

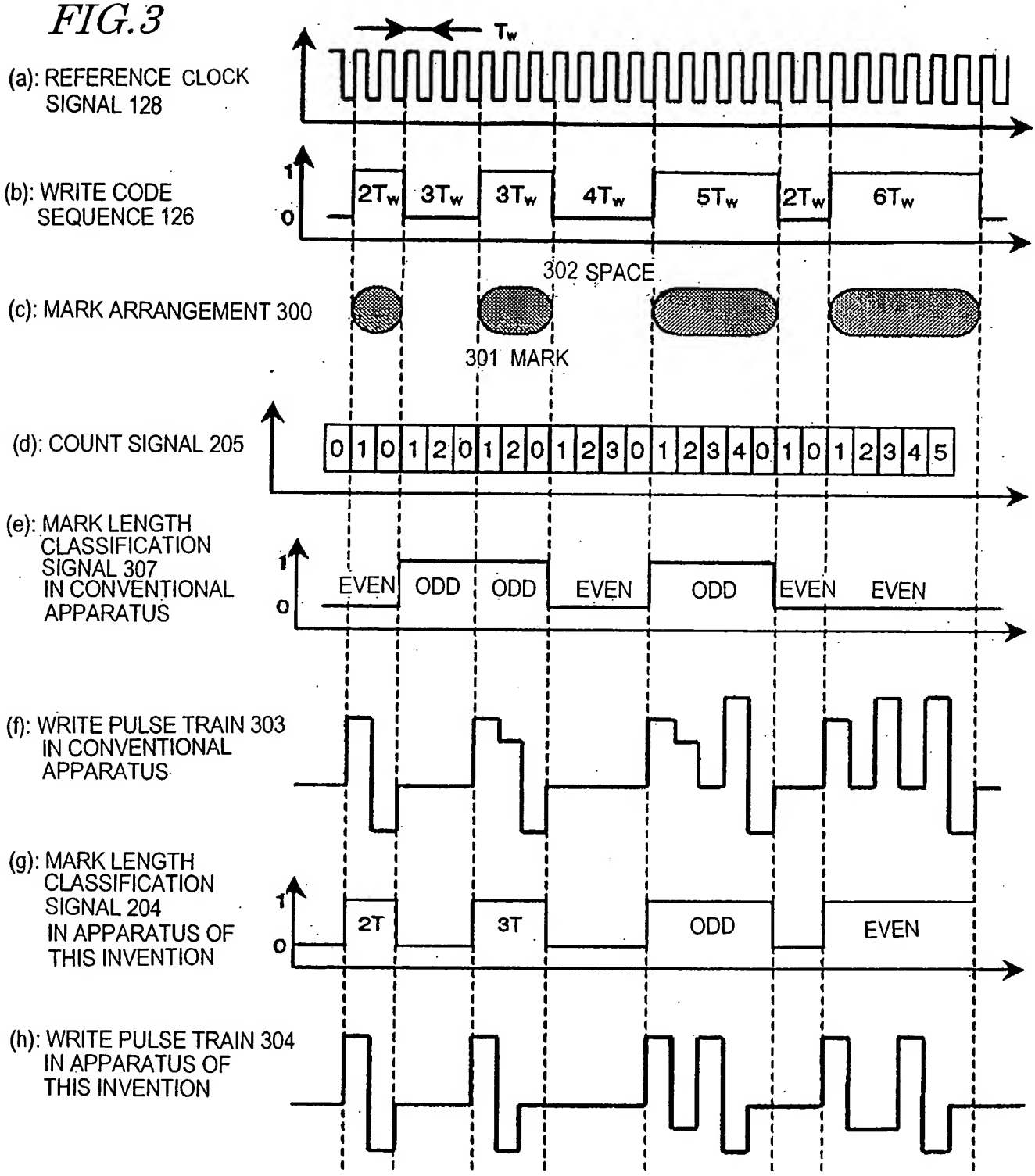

(a): REFERENCE CLOCK SIGNAL 128
Tw
(b): WRITE CODE SEQUENCE 126
1
0
2Tw
3Tw
3Tw
4Tw
5Tw
2Tw
6Tw
(c): MARK ARRANGEMENT 300
302 SPACE
301 MARK
(d): COUNT SIGNAL 205
0 1 0 1 2 0 1 2 0 1 2 3 0 1 2 3 4 0 1 0 1 2 3 4 5
(e): MARK LENGTH CLASSIFICATION SIGNAL 307 IN CONVENTIONAL APPARATUS
1
0
EVEN
ODD
ODD
EVEN
ODD
EVEN
EVEN
(f): WRITE PULSE TRAIN 303 IN CONVENTIONAL APPARATUS
(g): MARK LENGTH CLASSIFICATION SIGNAL 204 IN APPARATUS OF THIS INVENTION
1
0
2T
3T
ODD
EVEN
(h): WRITE PULSE TRAIN 304 IN APPARATUS OF THIS INVENTION

*FIG.4*

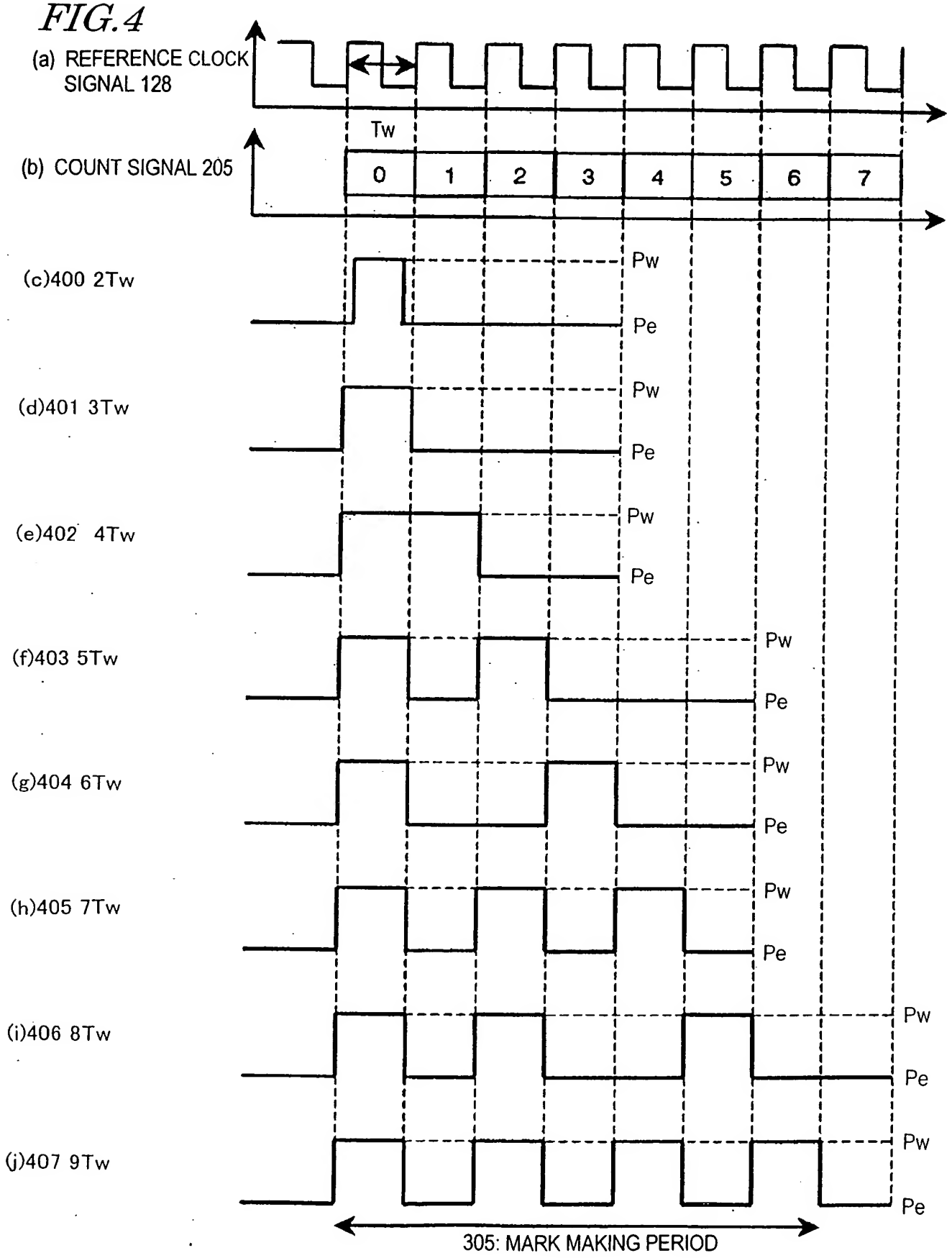

(a) REFERENCE CLOCK SIGNAL 128
Tw
(b) COUNT SIGNAL 205
0
1
2
3
4
5
6
7
(c)400 2Tw
(d)401 3Tw
(e)402 4Tw
(f)403 5Tw
(g)404 6Tw
(h)405 7Tw
(i)406 8Tw
(j)407 9Tw
Pw
Pe
305: MARK MAKING PERIOD

*FIG.5*

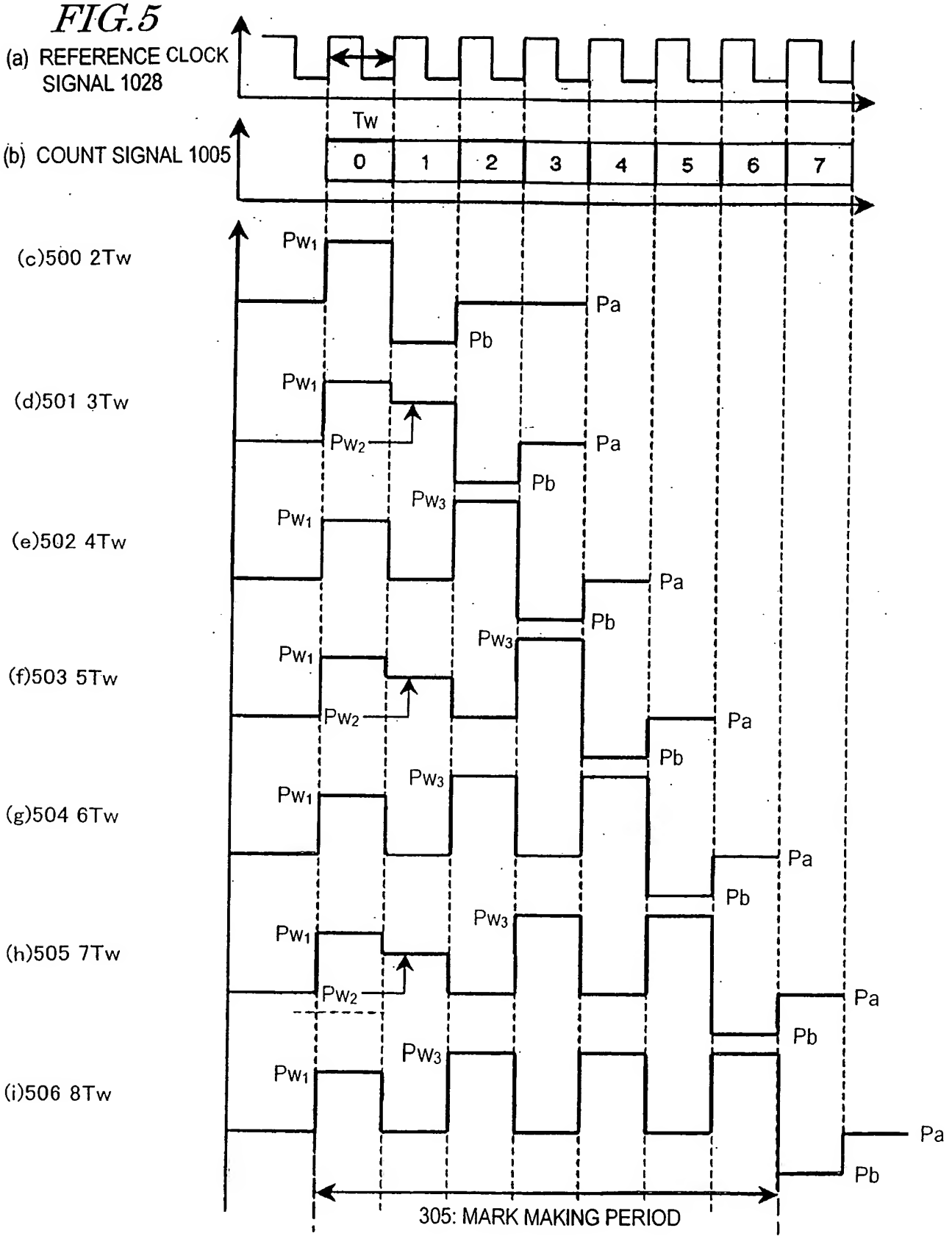

(a) REFERENCE CLOCK SIGNAL 1028
Tw
(b) COUNT SIGNAL 1005
0
1
2
3
4
5
6
7
(c)500 2Tw
(d)501 3Tw
(e)502 4Tw
(f)503 5Tw
(g)504 6Tw
(h)505 7Tw
(i)506 8Tw
Pw1
Pw2
Pw3
Pa
Pb
305: MARK MAKING PERIOD

*FIG.6*

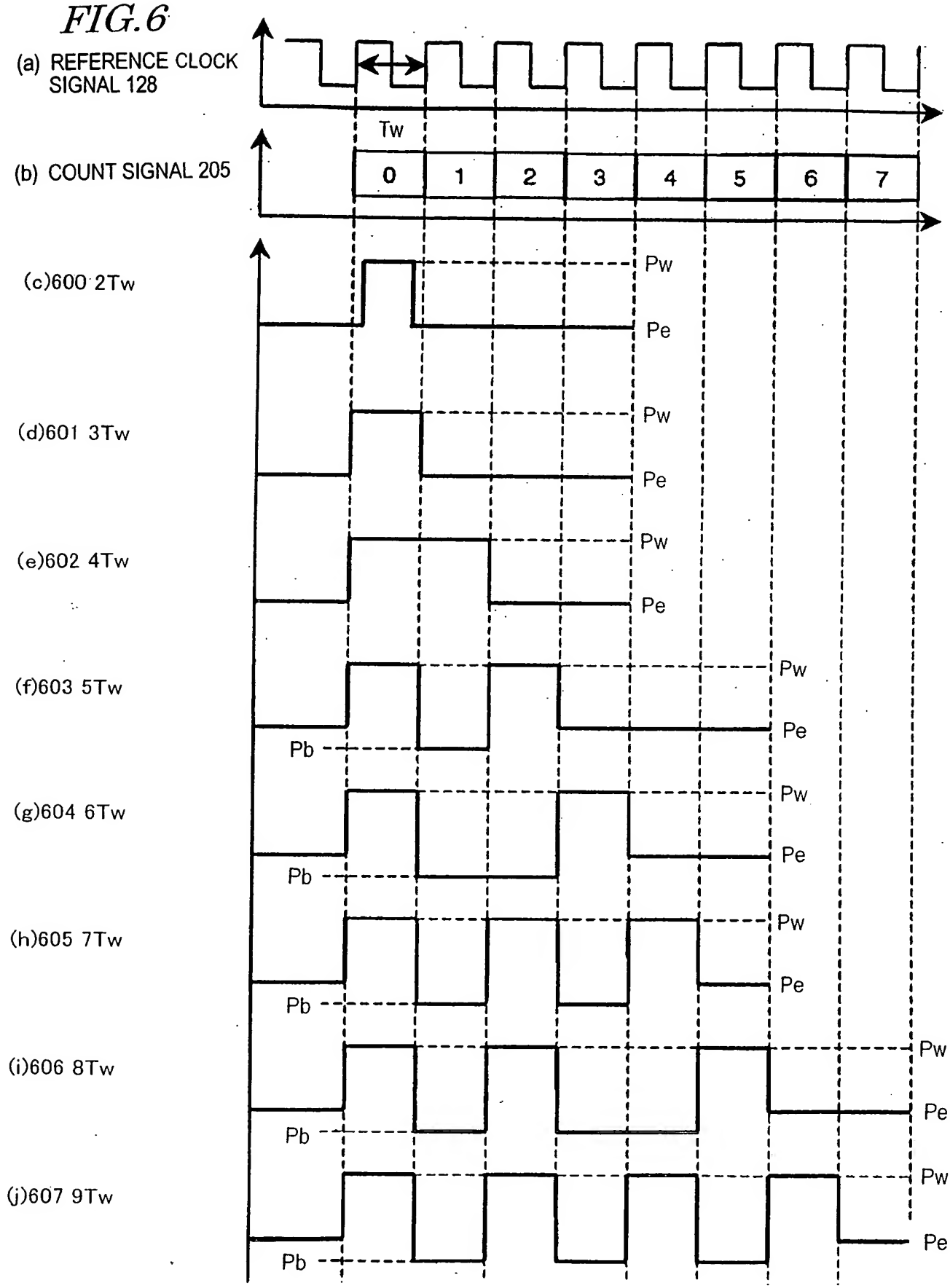

(a) REFERENCE CLOCK SIGNAL 128
Tw
(b) COUNT SIGNAL 205
0
1
2
3
4
5
6
7
(c)600 2Tw
(d)601 3Tw
(e)602 4Tw
(f)603 5Tw
(g)604 6Tw
(h)605 7Tw
(i)606 8Tw
(j)607 9Tw
Pw
Pe
Pb

*FIG. 7*

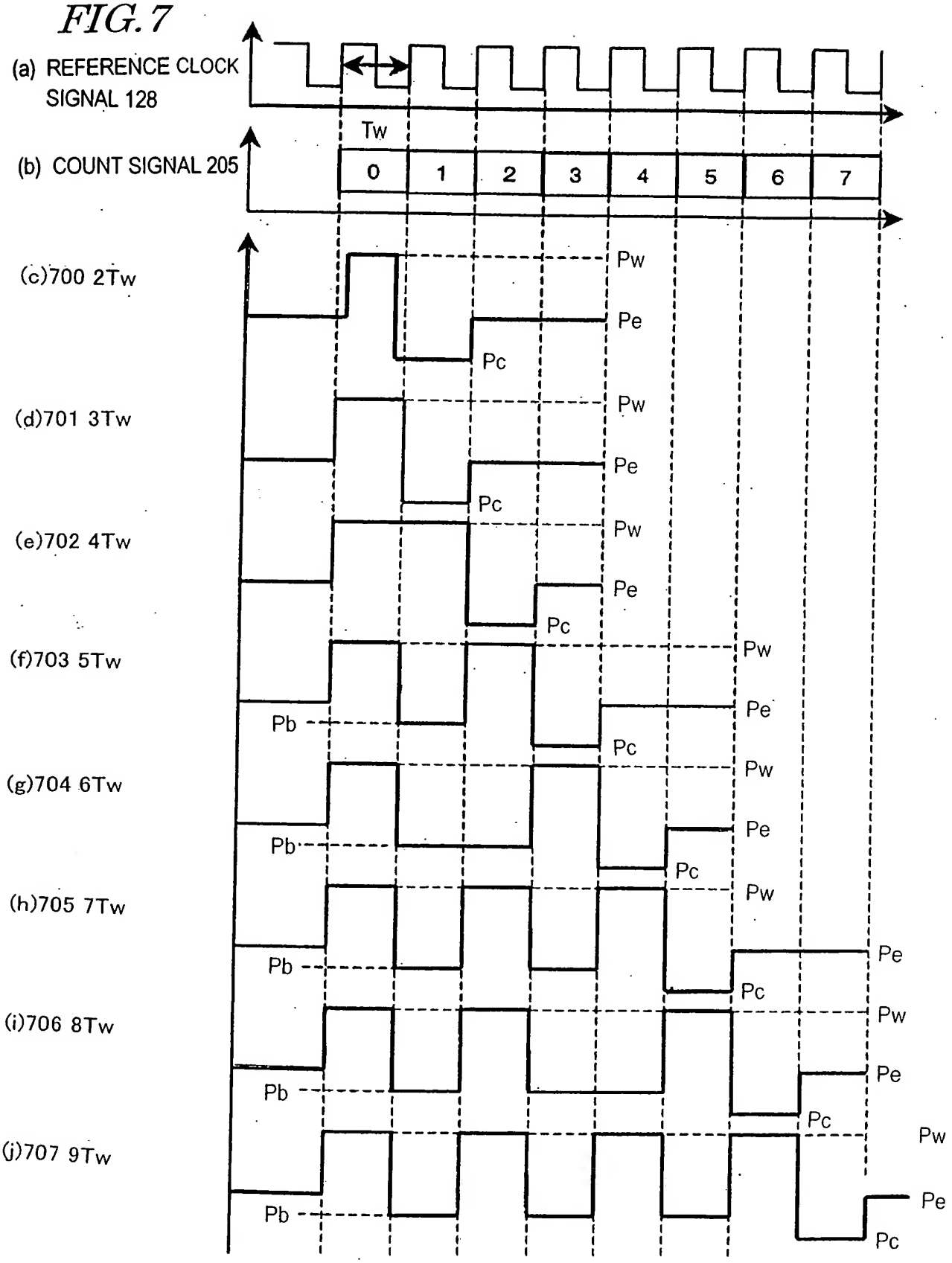
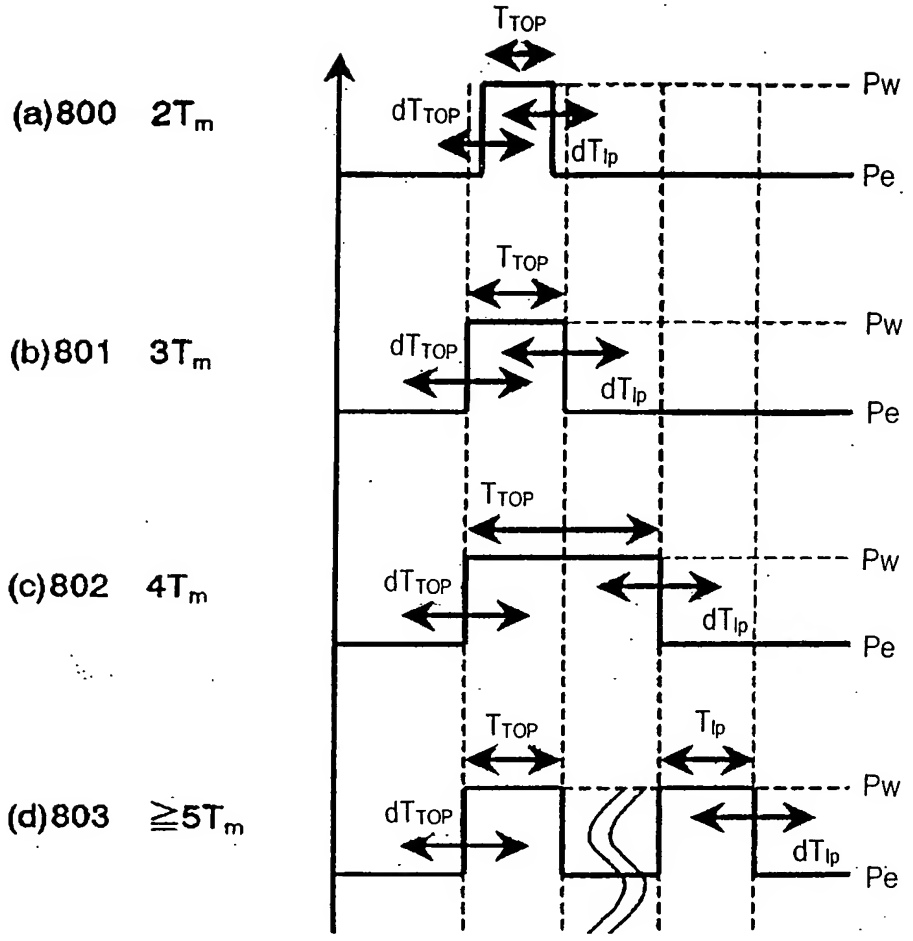

(a) REFERENCE CLOCK SIGNAL 128
Tw
(b) COUNT SIGNAL 205
0
1
2
3
4
5
6
7
(c)700 2Tw
(d)701 3Tw
(e)702 4Tw
(f)703 5Tw
(g)704 6Tw
(h)705 7Tw
(i)706 8Tw
(j)707 9Tw
Pw
Pe
Pc
Pb

*FIG.8*



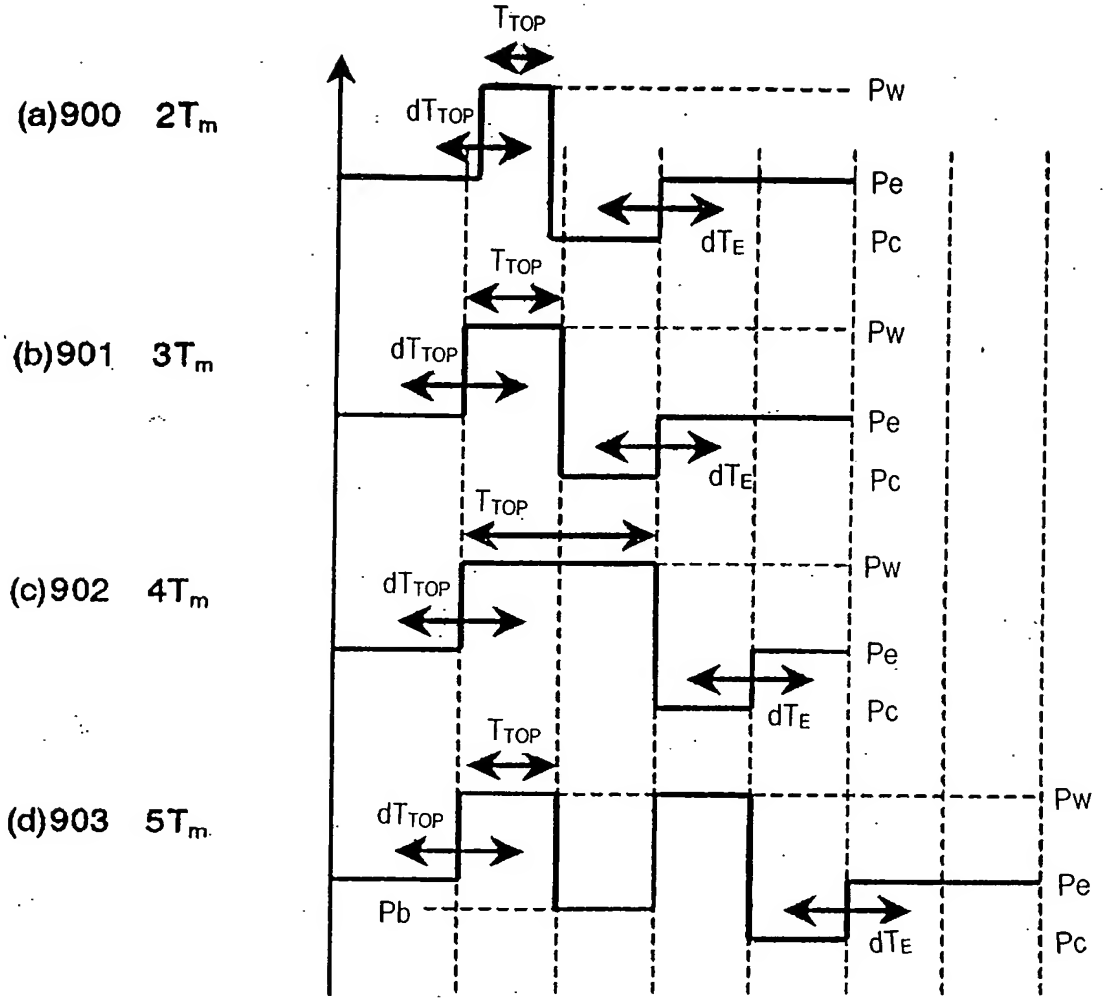

FIRST PULSE INCIDENCE POINT

| | 2T | 3T | 4T | ≧5T |
|---|---|---|---|---|
| $T_{TOP}$ | | | | |
| $dT_{TOP}$ | | | | |

LAST PULSE INCIDENCE POINT

| | 2T | 3T | 4T | ≧5T |
|---|---|---|---|---|
| $T_{lp}$ | | | | |
| $dT_{lp}$ | | | | |

*FIG.9*




FIRST PULSE INCIDENCE POINT

| | 2T | 3T | 4T | ≧5T |
|---|---|---|---|---|
| $T_{TOP}$ | | | | |
| $dT_{TOP}$ | | | | |

COOLING PULSE INCIDENCE POINT

| | 2T | 3T | 4T | ≧5T |
|---|---|---|---|---|
| $T_E$ | | | | |

*FIG. 10*

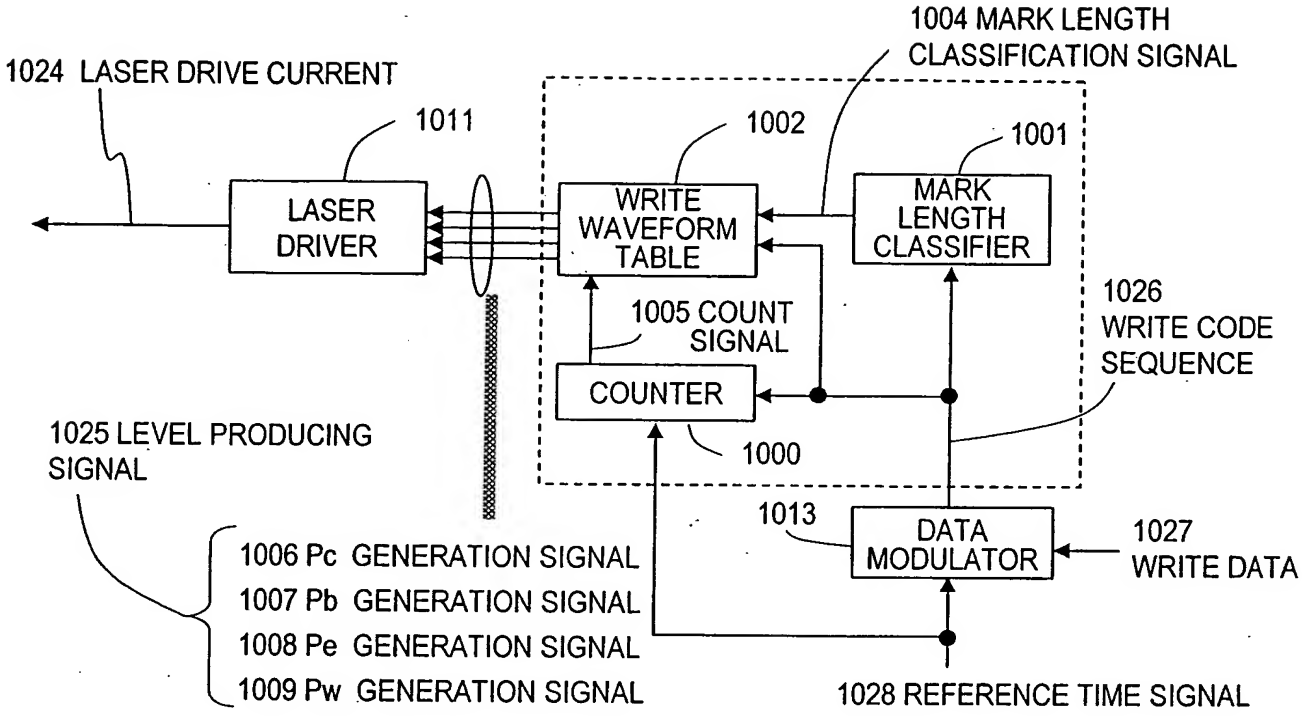

1004 MARK LENGTH CLASSIFICATION SIGNAL
1024 LASER DRIVE CURRENT
1011
1002
1001
LASER DRIVER
WRITE WAVEFORM TABLE
MARK LENGTH CLASSIFIER
1026 WRITE CODE SEQUENCE
1005 COUNT SIGNAL
COUNTER
1000
1025 LEVEL PRODUCING SIGNAL
1013
DATA MODULATOR
1027 WRITE DATA
1006 Pc GENERATION SIGNAL
1007 Pb GENERATION SIGNAL
1008 Pe GENERATION SIGNAL
1009 Pw GENERATION SIGNAL
1028 REFERENCE TIME SIGNAL

*FIG.11*

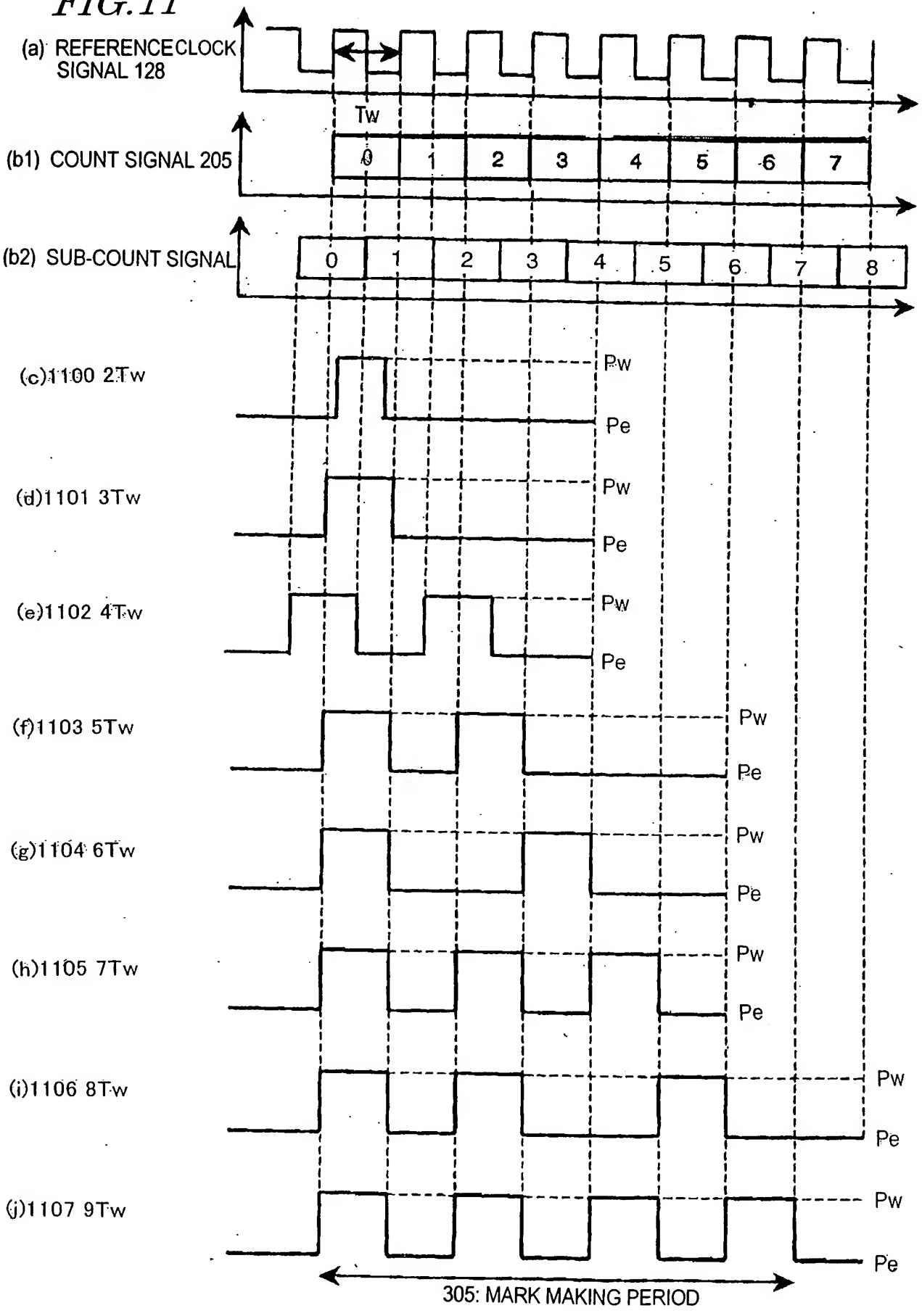

(a) REFERENCE CLOCK SIGNAL 128
Tw
(b1) COUNT SIGNAL 205
0 1 2 3 4 5 6 7
(b2) SUB-COUNT SIGNAL
0 1 2 3 4 5 6 7 8
(c)1100 2Tw
(d)1101 3Tw
(e)1102 4Tw
(f)1103 5Tw
(g)1104 6Tw
(h)1105 7Tw
(i)1106 8Tw
(j)1107 9Tw
Pw
Pe
305: MARK MAKING PERIOD

*FIG. 12*

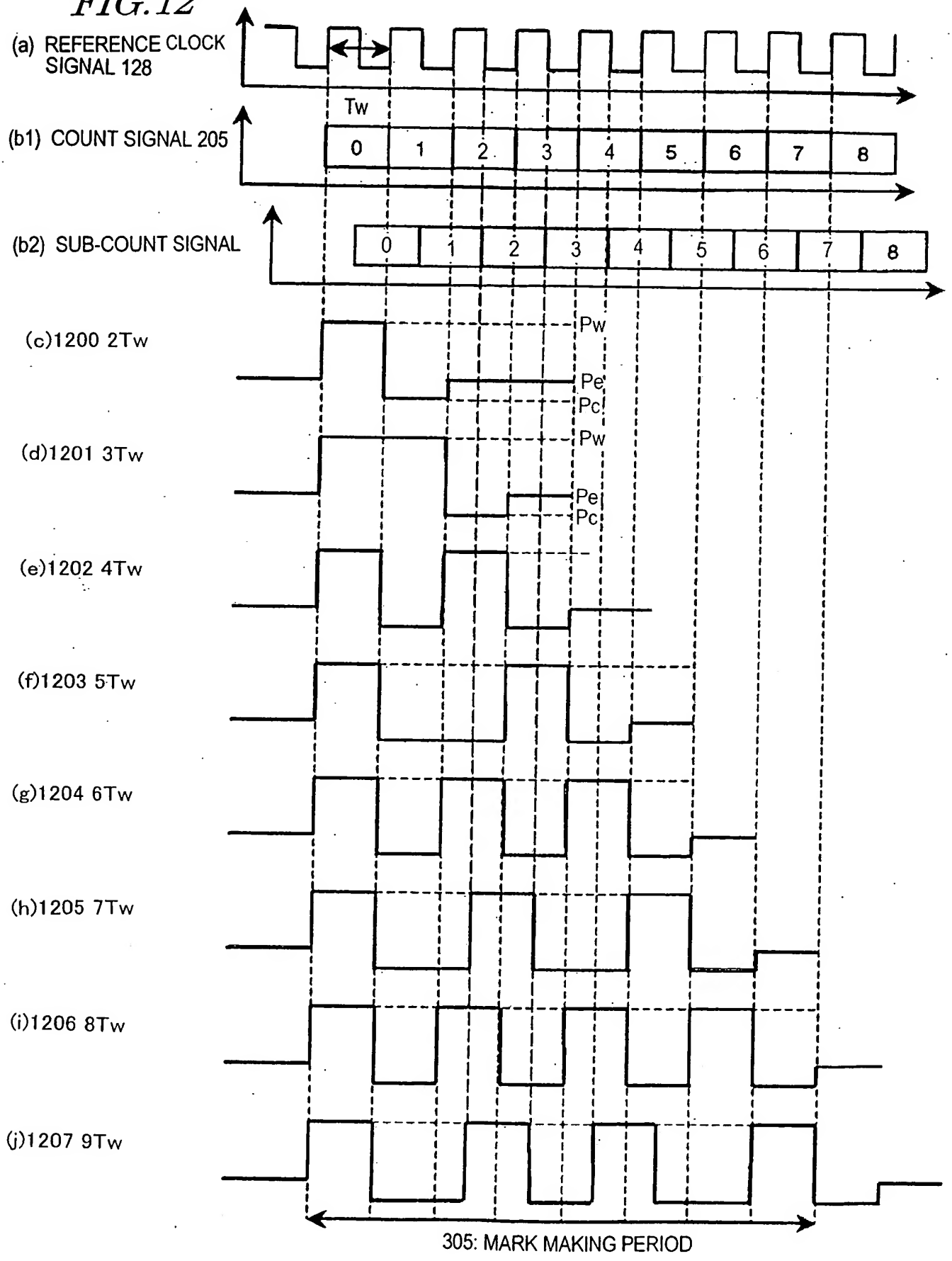

(a) REFERENCE CLOCK SIGNAL 128
Tw
(b1) COUNT SIGNAL 205
0 1 2 3 4 5 6 7 8
(b2) SUB-COUNT SIGNAL
0 1 2 3 4 5 6 7 8
(c)1200 2Tw
Pw
Pe
Pc
(d)1201 3Tw
Pw
Pe
Pc
(e)1202 4Tw
(f)1203 5Tw
(g)1204 6Tw
(h)1205 7Tw
(i)1206 8Tw
(j)1207 9Tw
305: MARK MAKING PERIOD

*FIG.13*